

### Exhibit P8.5: Physics Teachers' Participation in Professional Development in Physics in the Past Two Years

Reported by Physics Teachers

Teachers could indicate participating in more than one area of professional development.

Country	Percent of Students by Teacher's Area of Professional Development						
	Physics Content	Physics Pedagogy/ Instruction	Physics Curriculum	Integrating Information Technology into Physics	Improving Students' Critical Thinking or Problem Solving Skills	Physics Assessment	Addressing Individual Students' Needs
France	32 (2.8)	51 (3.4)	37 (3.5)	20 (2.9)	21 (2.8)	32 (2.8)	9 (1.9)
Italy	42 (3.6)	35 (3.4)	21 (2.8)	21 (2.9)	9 (2.0)	8 (1.7)	13 (2.7)
Lebanon	53 (4.1)	58 (2.6)	50 (3.8)	69 (2.5)	50 (3.7)	60 (3.1)	46 (4.3)
Norway	35 (4.6)	18 (3.7)	15 (3.6)	20 (3.4)	5 (1.8)	17 (3.5)	6 (2.0)
Portugal	59 (5.0)	48 (4.6)	35 (5.1)	55 (5.0)	16 (3.1)	17 (3.9)	13 (3.7)
Russian Federation	62 (4.1)	79 (3.8)	82 (2.7)	76 (3.4)	58 (4.8)	53 (4.3)	50 (3.9)
Slovenia	82 (2.4)	76 (3.0)	49 (3.6)	61 (3.0)	48 (3.0)	40 (3.6)	24 (3.4)
Sweden	42 (4.2)	28 (4.8)	15 (3.1)	27 (4.4)	9 (2.6)	26 (4.2)	17 (4.1)
United States	s 64 (5.8)	s 67 (5.3)	s 76 (5.4)	s 38 (5.1)	s 53 (6.2)	s 43 (5.6)	s 37 (5.9)
International Avg.	52 (1.4)	51 (1.3)	42 (1.3)	43 (1.2)	30 (1.2)	33 (1.3)	24 (1.2)

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. An "s" indicates data are available for at least 50% but less than 70% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS Advanced 2015